

State of Illinois
Department of Transportation
Bureau of Materials and Physical Research

POLICY MEMORANDUM

June 6, 2005	Springfield	05-04
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TO: REGIONAL ENGINEERS AND HIGHWAY BUREAU CHIEFS

SUBJECT: INSPECTION OF STONE FOR EROSION PROTECTION,
SEDIMENT CONTROL, AND ROCKFILL

1.0 PURPOSE

- 1.1 This memorandum establishes an inspection procedure for the use of stone for Erosion Protection, Sediment Control, and Rockfill.

2.0 STANDARD SPECIFICATION REFERENCE

2.1 Referenced Articles

- 1005.01

3.0 STOCKPILING

- 3.1 Stockpiling and handling procedures of material for Department use shall be as noted in QC/QA Procedure, "Stockpiling and Handling of Aggregate," located in the current "Manual of Test Procedures for Materials."

4.0 INSPECTION

- 4.1 The materials will be inspected at the source according to Article 106.04.

5.0 SAMPLING AND TESTING PROCEDURE (QUALITY)

- 5.1 Sodium sulfate soundness testing will be conducted on ledges used for erosion control protection and sediment control. Gradations RR1, RR2, CA01, or CA03 shall be sampled for testing of RR3 thru RR7. If the above sizes are not produced, other sizes approved by the Bureau of Materials and Physical Research may be sampled.
- 5.2 Sodium sulfate soundness testing will be conducted on bedding material (Gradations RR1 and RR2) using the manufactured gradation.
- 5.3 The Department reserves the right to test all riprap or bedding material in the Department's Rapid Freeze-Thaw for final acceptance.

6.0 SAMPLING AND TESTING PROCEDURE (GRADATION)

- 6.1 A minimum of one gradation check for each gradation produced shall be performed during initial production each year. Additional checks may be accomplished by visual inspection if no gradation problems exist.
- 6.2 The minimum size of stockpile shall be 1,000 metric tons (1100 tons) or the amount needed for the job, whichever is smaller.
- 6.3 The Producer shall notify the Engineer at least five (5) days in advance of the date when the material will be ready for inspection.
- 6.4 GRADATIONS RR3 THRU RR7.
- 6.4.1 The Engineer will direct all sampling operations, and the Producer shall provide the equipment necessary to sample in accordance with this procedure.
- 6.4.2 A grid of the dimensions indicated in the table below shall be marked on a clean surface (e.g., canvas, conveyor belting, concrete pad, etc.), so that a uncontaminated weight of fines and rock spalls may be obtained. Each grid shall be broken down into 5' increments or blocks (e.g., A grid for RR3 will consist of five (5) blocks that are 2' wide by 5' long, aligned in a row, for a total grid length of 25').

Gradation	Grid	Sample Size, (blocks to be tested), Minimum
RR3	2' by 25'	2
RR4	3' by 25'	2
RR5	4' by 25'	3
RR6	5' by 30'	3
RR7	5' by 35'	3

- 6.4.3 Under direction of the Engineer, the producer shall use a front end loader to excavate a representative sample for the working face of the stockpile to be sampled. The front end loader will then spread the sampled material over the grid, by backing and slowly dumping over the length of the grid. The material should be spread to an approximate one (1) rock thickness, in a fairly even distribution over the grid. The minimum sample size for each gradation is indicated in the table above, by the number of grid blocks to be tested. The test sample shall consist of all the material contained within the selected blocks, as well as all material on or above the grid lines of the selected blocks.
- 6.4.4 Gradation RR3 - The material excavated shall be weighed piece-by-piece until all pieces above the minimal specified weight have been weighed and recorded. All fines and rock spalls below the minimum specified weight shall then be gathered and weighed separately. Percentages of each size range for the gradation specified shall be calculated.

Gradations RR4, RR5, RR6 and RR7 – Each shall be measured length-by-width-by-height until all pieces above the minimal specified size have been

measured and each measurement recorded. All fines and rock spalls below the minimum specified size shall then be gathered and counted separately and recorded. The weight of each piece shall be calculated using the following formula:

$$W = [(A)(B)(C) / (1728)] 166$$

Where: W = Calculated Weight (lbs.)
A = Length (in.)
B = Width (in.)
C = Height (in.)

Percentages of each size range for the gradation specified shall then be calculated.

Gradations RR3, RR4, RR5, RR6, and RR7 - Elongated particles shall be determined during the weighing or measuring procedure and total percent calculated.

6.5 BEDDING MATERIAL (RR1 & RR2)

- 6.5.1 A 10,000g (22 lb.) sample shall be obtained and gradation run according to Illinois Modified AASHTO T 27 located in the Manual of Test Procedures for Materials.



David L. Lippert, P.E.
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and Physical Research

This Policy Memorandum supersedes Policy Memorandum Number 04-01 dated January 15, 2004.
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